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Report to the Honorable

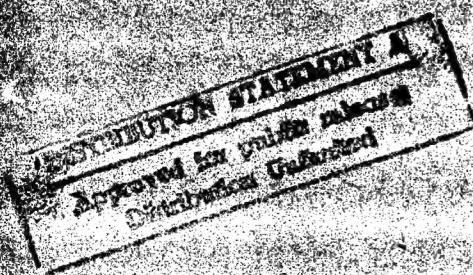
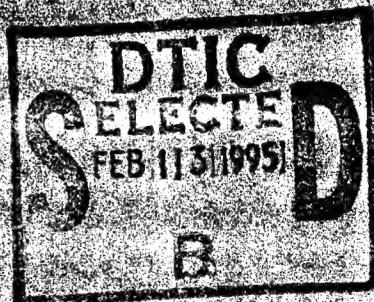
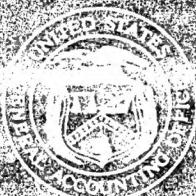
Jim Pacholski, House of Representatives

April 1992

KENNEDY SPACE CENTER

DECISION ON Photographic Requirements

APPROVED AND FURNISHED



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United States
General Accounting Office
Washington, D.C. 20548

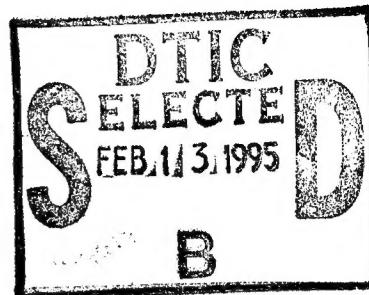
National Security and
International Affairs Division

B-248197

April 23, 1992

The Honorable Jim Bacchus
House of Representatives

Dear Mr. Bacchus:



This report responds to your request that we review allegations of potentially wasteful duplication of photographic services at National Aeronautics and Space Administration's (NASA) John F. Kennedy Space Center. Specifically, we reviewed the circumstances surrounding Kennedy's decision to include photographic requirements as part of some of its mission contracts, the cost of photography performed by these contractors, and the quality of these contractors' photographs.

Background

Prior to 1969, Kennedy Space Center and the Air Force Eastern Test Range¹ each had their own photographic support contractors, film processing facilities, and photographic equipment maintenance and repair capabilities. In 1968, we recommended that NASA and the Air Force consider consolidating their photographic operations to achieve cost savings.² Both organizations are headquartered in the vicinity of Cocoa Beach, Florida. The consolidation was accomplished and a single photography support contract awarded in January 1969. Since that time the contract has been rebid several times. The latest contract was awarded in 1991 to the Bionetics Corporation. The photography support contract is administered by the Air Force.

The contract encompasses virtually every type of photographic and video service associated with general support and scientific photography, including taking still photographs; producing motion pictures; processing film; and maintaining, repairing, and calibrating photographic equipment. The current contract is valued at about \$6.9 million for fiscal year 1992.

When NASA judged that the space shuttle had reached an operational phase in 1982, the agency began consolidating shuttle processing and support functions that had previously been performed by a number of contractors

¹The Eastern Test Range is now the 45th Space Wing.

²Opportunity for Savings by Consolidation of Photographic Operations at the John F. Kennedy Space Center and Air Force Eastern Test Range (B-162902, Jan. 10, 1968).

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into three large mission contracts. These were a shuttle processing contract, a payload ground operations contract, and a base operations contract. The purpose of the consolidations was to save money and to more clearly focus responsibility for shuttle and payload processing in order to improve flight safety and mission effectiveness.

According to Kennedy officials, NASA made these three contractors responsible for all aspects of their respective missions, including some photography—primarily closeout and operational engineering photographs³—directly supporting the accomplishment of their missions. The photographic support contractor remained responsible for all other photography, including launch, tracking, and public affairs photographs, and for operating the film processing laboratories.

Aspects of NASA's decision to include some photographic requirements in the three mission contracts have been reviewed by the courts, the Department of Labor, Congressman Bill Nelson, and NASA's Office of the Inspector General. Appendix I provides a chronology of these and other events associated with the decision.

Results in Brief

NASA's decision to transfer some photography work from the photographic support contractor to the shuttle processing, payload ground operations, and base operations contractors was an attempt to hold the three contractors more fully accountable for accomplishment of their respective missions. Most of the photographic work in question is performed as a minor part of the duties of quality assurance personnel with simple-to-use cameras. According to NASA's Inspector General, the photography costs are less than would be incurred if the photographs were taken by the photographic support contractor. Engineers who use the photographs are generally satisfied with their quality, and in cases where NASA believes that professional quality photographs are needed, it can have the photographic support contractor take them.

³The purpose of these photographs is to document the results of processing tasks and other events that occur during shuttle and payload processing.

NASA's Decision Based on Desire to Better Focus Accountability

NASA's decision to include photography requirements in its mission contracts was part of its strategy to make these contractors fully accountable for the cost, schedule, and technical management of their respective missions. To achieve this accountability, NASA decided that these contractors also should be responsible for their own basic support functions.

The mission contractors are responsible for photography that directly affects their missions. For example, the scope of work of the shuttle processing contract requires that the contractor "be responsible for providing operational and engineering still photography for tasks that are required in the performance of SPC [shuttle processing contract] functions." The mission contractors are also responsible for film processing. However, their contracts include provisions which state that the government has provided for on-site film processing laboratories that the contractors may choose to use at no charge. According to Kennedy's photographic coordinator, all "official" photographs taken at the Space Center are processed at the government-owned laboratories, which are operated by the photographic support contractor.

According to Kennedy officials, including the photographic requirements in the mission contracts means that the contractors cannot cite a lack of photographic support as a reason for not accomplishing their assigned tasks on schedule and within costs. Kennedy officials told the Inspector General that in the past, photographic support contractor employees had to be called to job sites to perform photographic work. In some instances, work was stopped or delayed until the photographers arrived.

The three mission contracts are monetarily large, and their missions are vital to NASA. The shuttle processing contract is valued at over \$8 billion through fiscal year 1998, the payload ground operations contract is valued at over \$2.5 billion through 2001, and the base operations contract is valued at about \$1.5 billion through December 1992.

According to Kennedy officials, any impediment to accomplishing the contractors' missions could result in costly delays. There is no standard estimate of costs associated with shuttle and payload processing delays, since the costs depend on when the delays occur and what tasks are delayed. However, an official in Kennedy's Space Transportation System management and operations directorate told us that delays can be

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expensive, as illustrated by the fact that it costs about \$148,000 for each day a shuttle vehicle spends in the orbiter processing facility.⁴

Photography Costs Associated With Mission Contracts

According to the Inspector General's 1985 report,⁵ transferring photographic responsibility to the mission contractors was a cost-effective decision. The report shows that the added costs of having the mission contractors establish their own photographic capabilities were more than offset by cost reductions associated with the downsizing of the photographic support contractor's work force.

The Inspector General estimated that NASA spent about \$216,000 to buy equipment and provide training associated with the mission contractors assuming some photographic responsibilities. These costs were more than offset by savings resulting from the photographic support contractor's elimination of six photography jobs that were no longer needed.

Eliminating the six positions resulted in recurring cost savings of \$197,784 per year, according to the Inspector General. The Inspector General projected that NASA would, therefore, realize an annual net savings of about \$102,000, beginning in the third year.

Also, according to the Inspector General, having personnel with photographic capabilities already present at the work sites had reduced work stoppages, delays, and associated costs. In the past, either workers had to stop while they waited for a contract photographer to arrive or the photographer had to spend long, unproductive hours waiting for that point in the closeout process when photographs were required. Neither of these approaches was cost-effective, according to NASA.

We found that the costs associated with the mission contractors' photography are relatively small. Costs include the time employees spend taking the photographs, film processing costs, and the cost of purchasing cameras and other photographic equipment.

We could not determine the cost of time the three mission contractors' employees spend taking photographs because the employees do not separately record time spent on photography. According to both NASA and

⁴Most ground processing time occurs in the orbiter processing facility, where the contractor checks, repairs, and refurbishes each major orbiter system after every flight.

⁵Photographic Operations Under the Shuttle Processing Contract, NASA Office of the Inspector General (A-KE-85-005, Dec. 20, 1985).

contractor officials, the three mission contractors do not employ any full-time photographers; their employees take photographs as only one minor part of their duties. The shuttle processing contractor and the payload ground operations contractor rely primarily on their quality assurance personnel to take the photographs. These employees are already on hand when processing tasks are closed out and take the closeout photographs at that time.

We talked to shuttle processing and payload ground operations contractor employees who told us that photography is a minor part of their responsibilities. One payload ground operations contractor employee told us, for example, that taking the closeout photographs accounts for less than 5 percent of a quality engineer's time.

The base operations contractor takes photographs for a number of different purposes, such as security, fire inspection, accidents, and environmental health. Personnel involved in these areas take the photographs, according to an official in Kennedy's operations support office.

The cost of processing film taken by the three mission contractors has averaged about \$70,500 a month since fiscal year 1990. However, photographs taken by the mission contractors are all processed at the government-owned film laboratories operated by the photographic support contractor. The same film processing costs would be incurred if the photographic support contractor took the pictures.

The three mission contractors have not acquired large inventories of photographic equipment. Table 1 shows the photographic equipment in the contractors' inventories.

Table 1: Photographic Equipment In Inventory of Kennedy Mission Contractors

| Contractor | Cost of equipment |
|---------------------------|--------------------------|
| Shuttle processing | \$70,112 |
| Payload ground operations | 71,257 |
| Base operations | 21,893 |

For the most part, these inventories consist of relatively inexpensive automated equipment. For example, 83 percent of the items of photography equipment in the shuttle processing contractor's inventory cost less than \$1,000 each.

Photographic Quality Is Considered Acceptable

The Presidential Commission on the Space Shuttle Challenger accident was critical of the quality of closeout photographs taken by the shuttle processing contractor. According to the Commission's April 1986 report, "the quality of closeout photographs could be improved by using experienced photographers rather than hardware inspectors."

The Kennedy photographic coordinator told us that the shuttle processing contractor has taken steps to improve the quality of closeout photographs and current quality is considered acceptable by the engineers who use the photographs. Since the Challenger investigation, the shuttle processing contractor has increased the amount of photography training it provides quality assurance inspectors. Inspectors are given a 24-hour formal training class on photography. According to the Kennedy photographic coordinator, training personnel also make random checks of closeout photographs and provide critiques and suggestions for improving photographic quality to the inspectors.

Kennedy periodically surveys engineers who use the closeout photographs. Recent surveys have consistently shown that the engineers were satisfied with the quality of photographs.

According to the Kennedy photographic coordinator, the photographic support contractor is used for any photos requiring professional quality. For example, NASA recently tasked the photographic support contractor to take an entire photographic layout of the shuttle orbiter cockpit. High-quality photographs were needed by Lyndon B. Johnson Space Center engineers to study possible changes in the cockpit.

Scope and Methodology

We reviewed reports, correspondence, and court decisions relating to the transfer of photography requirements to Kennedy mission contractors. We also reviewed contract provisions and contractor inventory records. We held discussions with officials from NASA, the mission and photographic support contractors, and the union that represents photographic support contractor employees. We also interviewed several employees who take the photographs for the shuttle processing and payload ground operations contractors.

Our work was performed from January through March 1992 in accordance with generally accepted government auditing standards. As requested, we did not obtain NASA's comments on this report. However, we discussed the

information with Kennedy Space Center officials, who generally concurred with our findings.

We are distributing copies of this report to the Administrator of NASA; the Director, Office of Management and Budget; and interested congressional committees. We will make copies available to others upon request.

Please contact me at (202) 275-5140 if you or your staff have any questions concerning this report. Work on the report was performed primarily by Lee Edwards, Evaluator-in-Charge, Atlanta Regional Office.

Sincerely yours,

Mark E. Gebicke

Mark E. Gebicke
Director, NASA Issues

Chronology of Events

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| January 1968 | GAO recommends that NASA and the Air Force consider consolidating photographic operations at the John F. Kennedy Space Center and the Air Force Eastern Test Range (now the 45th Space Wing). |
| January 1969 | Air Force awards a contract for consolidated photographic support at the Kennedy Space Center and Eastern Test Range. |
| Early 1983 | Kennedy issues a request for proposal for the shuttle processing contract. The contract requires the contractor to be responsible for operational and engineering still photography in support of shuttle processing functions. |
| July 1983 | Locals 666 and 780 of the International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators file suit in federal court. The union alleges that NASA violated the Service Contract Act (41 U.S.C. 351 et seq.) by allowing still photography and film processing to be included in the shuttle processing contract without submitting the positions of still photographer and film processor to the Secretary of Labor for wage determination under section 4(c) of the act. The purpose of the act was to guarantee that successor contractors would not pay lower wage rates for the same work performed under prior government contracts. |
| December 1983 | The federal district court for the Northern District of Illinois, Eastern Division, rules that the union did not have standing to sue because it did not represent shuttle processing contractor employees. The union files an appeal with the U.S. Court of Appeals, Seventh Circuit (Chicago). |
| March 1984 | Photographic support contractor employees write Congressman Bill Nelson alleging that including the photographic requirements in the shuttle processing contract was a waste of taxpayer money and jeopardized the employees' jobs and national security. |
| April 1984 | Congressman Nelson asks the Kennedy Space Center to investigate the employees' complaints. Kennedy's April 17 response declines to discuss those aspects of the complaint dealing specifically with the shuttle processing contract because of the pending litigation. However, the Space Center Director points out that the availability of simple-to-use photographic equipment has resulted in a gradual shift toward the use of such equipment by skilled operational personnel as an incidental part of their normal job. This resulted in productivity efficiency at minimal additional equipment cost, according to the Director. |
| December 1984 | The Department of Labor notifies the shuttle processing contractor that work previously performed by the photographic support contractor and incorporated into the shuttle processing contract falls under section 4(c) of the Service Contract Act. The Department instructs the contractor to notify the Department of its intentions to reimburse its employees for time actually spent performing these functions at the rates established in the photographic support contract. The wage determination is for a 1-year period only. |

(continued)

Appendix I
Chronology of Events

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| April 1985 | The Court of Appeals upholds the District Court's decision to dismiss the union's suit. In its decision, the Appeals Court notes that "the same work is not being performed by others at lower wage rates. NASA no longer requires the sophisticated photographic services that it needed during the Space Shuttle's development phase. Engineers, technicians, and inspectors now fulfill the limited photography services as an incidental part of their duties, using highly automated cameras that do not require special expertise. The former positions have been eliminated rather than reclassified as the Union alleges." |
| November 1985 | The U.S. Supreme Court refuses to hear a further appeal by the union. |
| December 1985 | NASA's Office of the Inspector General reports on its review of photographic operations at Kennedy. The report concludes that photography costs incurred by the three mission contractors were more than offset by savings realized in the photographic support contract. |
